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Federal Communications Commission  
Office of the Secretary

**To:** Bill Caton, FCC**From:** Contra Costa County CWS**Fax:** 202 418-0187**Pages:** 24 (including cover)**Phone:** 202 418-0304**Date:** 10/29/04**Re:** EAS NPRM Comments**CC:**

The attached comments on the EAS NPRM are from the Contra Costa County Community Warning System (CWS) Technical Advisory Committee (CTAC).

We will also e-mail a copy of the comments to [eas@fcc.gov](mailto:eas@fcc.gov)

We appreciate the opportunity to provide input to changes to the EAS system.

Please contact Lis Klute, CWS Manager with any comments or questions.

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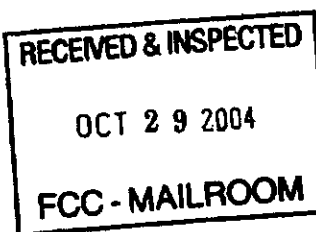
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NOV 2 - 2004

**Consolidated Comments on the Notice of Proposed Rulemaking  
 (NPRM) for the Emergency Alert System (EAS)**

Federal Communications Commission  
 Office of the Secretary

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**General Comments**

Efraim Petel, President, Hormann America

1. **The need for the New Emergency Alert System (NEAS):**
  - The NEAS is urgently needed by the local governments to streamline the implementation of various alerting devices and systems that sprouted since 9/11. The EAS rule-making process should be completed as soon as possible and result in a rule for the creation of the New Emergency Alert System (NEAS).
  - Many local governments and cities are in implementation process or planning to implement various types of warning mechanism. Each one will implement the best system that it can afford and that is available at the time, with whatever technology that the commercial vendor used. As there is no "warning standard" these systems are stand-alone systems, and each one has various technologies and protocols for each component of the system.
  - The current EAS is a tool that can be used for wide-area warning, similar to weather type alerts. While the current EAS area resolution is a few counties at least (in the San Francisco Bay Area it is for 11 counties!), today's needs are for pin-point alert down to one building at times. The current EAS has its own role as a part of the NEAS, especially if the data stream included in it will be expanded.
2. **Hierarchical Structure of the NEAS:**
  - The NEAS should define the "backbone" structure that connects all "sources" and "consumers" of alert and warning. This backbone should have clearing houses and gateways for authentication and communications between all users (suppliers and consumers) starting at County level, States and federal Government up to the President of the United States. We believe that the Federal Government should implement this backbone and maintain it, using expanded Common Alerting Protocol.
  - Local jurisdictions should have their access to the NEAS. A "matrix" that defines who can use each tool and how wide the area controlled is allowed per legitimate user can be maintained in a similar fashion to the current LECC plans, starting at a County level, Region, State and federal authorities.
3. **Role of the National Weather Service (NWS) in the NEAS**
  - The NWS has a good, established communications system in the nation. Using this system for the NEAS backbone would be a natural selection minimizing costs and implementation time. The governing organization should be within the department of Homeland Security, while the NWS will only provided communications services.
  - Many cities and counties are using the National Weather Service (NWS) Radio for alerting and warning, and these roles of the NWS should be expanded to allow better utilization -- both expansion in the authority of the users to broadcast more messages directly and expansion of the channels to reach the public, i.e. the number of the radio frequencies allowed. The current 7 channels are not sufficient for a good coverage of the nation.

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**EAS Education and Performance Review**

Sergeant Alfred Oretaga, LA County Sheriff's Office

In light of recent events surrounding our country, the need for an effective yet concise method of informing the public of emergencies has been emphasized. With the EAS system already in place, it is recommended that a new procedure be implemented, which would hold agencies accountable for their performance, as well as efficient citizen notification.

By conducting an annual nationwide test of the EAS system, an agency's procedural abilities can be assessed, leading to in depth evaluation, and recommendations for improvement. This test will be executed as if it were an actual emergency, requiring each participant to follow the required steps in the event of an EAS activation. A committee needs to be formed in order to gauge each department's performance, resulting in an annual performance results list, inclusive of agency rankings and suggestions for improvement. An allocation of funding would be required to conduct this yearly trial.

This type of documentation would not only prevent the system from becoming antiquated, but also instill consistency and proper response among agencies across the nation. Education to public safety and citizens is critical in making any type of infrastructure successful.

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***EAS Channel Allocation Request***

Jack King, LA County Sheriff's Office

For day in day out use such as Amber Alerts, hazardous, material spills, single municipality emergencies, small area evacuations and so on: web based or public switched telephone solutions are quite adequate. There are several situations that will not fit into these solutions. How do you get the information to the largest number of citizens simultaneously when the normal infrastructures of communications are overtaxed or failing due to the damage caused by the emergency event itself? An example of a fire where the evacuation orders can not be delivered by phone because the wires are down the poles have burned or the local central office of the phone co has gone up in smoke. The cellular phone sites are up but the number of users has increased to their limit by the government usage and those who would have been using landline phones are reporting to their families outside the area or long distance users are calling to find the status of their relatives. Web based solutions fall into the same scenario as the phones because to most individuals the phone company supplies the land line or wireless infrastructure for the internet and or e-mail.

As an answer to this lack of emergency alerting resource: I think we should follow the example of the U. S. Weather service and the military services of the United States and establish dedicated radio channels for the use of Emergency planners which can be monitored by the government agencies, emergency service providers, physically impaired citizens, commercial broadcast stations [such as the local P1's] and private citizens: for the distribution of digitally encoded alert messages which will notify the affected population and areas and deliver a digitally displayed and voiced emergency message. In fire storms whole communities could be notified simultaneously to evacuate by an alarm sounded by this unit in their home. They could be instructed to tune to a local commercial broadcast station for further information while this system is made available for other messages. The commercial broadcasters could be alerted and more intensive information could be sent digitally for broadcast to the maximum number of residents.

Since similar systems already exist for the weather service; allocation of frequencies in the 162.00 Mhz region would make the price of a monitor receiver for the general public very affordable. (\$40.00). We would need at least 4 simplex frequencies for the Los Angeles basin in order to get the information that will be digitally encrypted to the mountaintop and then transmitted high power to the end users. We already have funds allocated to build the prototype system for this but we need at least two channels in the federal government bands at 148 Mhz and two channels at 162 Mhz in order to build this system and the 148 Mhz channels could also be in the 400 Mhz region for linking to mountain or tall tower locations.

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**Comments on Paragraphs 21 through 41**

Art Botterell, Consultant

**Paragraph 21**

- A. Both PPW and MSRC advocate upgrading, not replacing EAS.

This is correct, however it should not be misunderstood as PPW advocating that EAS be the only component of a national warning system. EAS has a vital role to play, but needs to take its place in an integrated national warning architecture that addresses state and local as well as federal requirements.

**Paragraph 22**

MSRC recommendations -

- A. A single federal entity should be responsible for assuring;
1. The public communications capabilities and procedures exist, are effective, and are deployed for distribution of risk communications and warnings to the public by appropriate federal, state and local government personnel, agencies and authorities.

PPW strongly supports the suggestion that the appropriate criterion for warning system success is *effectiveness* as measured by improved outcomes for the public.

2. That lead responsibilities and actions under various circumstances are established at federal, state and local levels within the overall discipline of emergency management.

PPW agrees, but cautions that this should not be taken to mean that a variety of first-responder agencies (law, fire, public health, etc.) should not be allowed to serve in lead roles as circumstances warrant. To ensure prompt and accurate warnings, with a minimum of delays or distortion, warning messages should be originated by the agency most directly involved in the event that has the capability to do so.

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3. That a national, uniform, all-hazard risk communication warning process is implemented from a public and private consensus on what best meets the needs of the public, including people of diverse language and/or with disabilities, including sensory disabilities.

PPW strongly agrees, and stands ready to assist in the development, documentation and implementation of that consensus. PPW is a non-profit, public-private partnership organization formed in 2001 with representation from the public, industry, government and academic organizations.

Paragraph 23

- A. What should be the respective roles of the federal government departments and agencies involved with the implementation of EAS, specifically the FCC, DHS, FEMA and NOAA?

PPW believes that one useful distinction is between the maintenance of warning facilities like EAS and the actual use of those facilities to issue warnings.

The historic lead role of the FCC in enforcing the maintenance of the EAS infrastructure has been complicated by the assignment of other roles, especially funding, to other agencies. At the same time, the focus of the FCC's mass-media regulatory activities has tended to isolate EAS from other warning systems, thus unintentionally impeding the development of an integrated national warning architecture. PPW believes that lead responsibility for EAS, as part of an integrated national warning capability, should lie with an agency involved in the actual use of the system. The FCC should and must remain involved in a supporting role as regards regulation and enforcement within its purview.

A number of federal departments and agencies may have occasion to use EAS (and other warning systems) in discharging their responsibilities. PPW believes there is a need for a single operational mechanism for disseminating warnings from federal agencies in a timely and accurate and effective manner. However, safeguards must be provided to ensure that such a mechanism does not become a bottleneck or even a single-point-of-failure

- B. Should each of these agencies remain involved?

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PPW believes it would be inappropriate for any of these agencies to disengage either from EAS or from the larger national warning architecture.

C. If not, what specific changes in roles should occur?

One overall lead agency should be designated and empowered to ensure that crucial issues do not "fall between the chairs" of jurisdiction.

D. For changes to occur, would the FCC or other federal entity have to recommend that current legal authorities be updated or supplemented?

PPW believes that the Department of Homeland Security has the necessary authority. However, it might be helpful for legislation to unambiguously delineate its responsibility in this area, which until now has been more implicit than explicit.

E. Should a new public/private partnership be created to ensure the effective and efficient delivery of emergency information to the public?

Such a partnership exists in the form of the national non-profit Partnership for Public Warning (PPW). However, PPW has been hampered in its pursuit of these goals by the lack of a single federal agency with unambiguous authority for supporting PPW and for applying identified best practices in public warning to federal (and by funding and guidance, to state and local) programs.

PPW has scaled back its operations to match its available funding, but continues its work in technical standards (such as the Common Alerting Protocol) and other aspects of emergency public information. It remains a standing not-for-profit corporation ready to advance these purposes.

F. If so, how should this partnership be structured and what would its responsibilities be?

PPW recommends that it be chartered and utilized as a Federal Advisory Committee to facilitate involvement by industry, academic and non-governmental organizations with local state and federal department and agencies in the development and implementation of programs and policies for effective public warning.

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G. What federal agency should be its primary point of contact?

PPW views the Department of Homeland Security as the most obvious candidate for this role. However, what matters is that some single federal agency be assigned the lead responsibility for public warning, and that the public-private Partnership for Public Warning have its primary federal point of contact with that agency.

H. Should a particular federal agency take the lead role for the future EAS?

PPW would encourage reframing this question to ask "Should a particular federal agency take the lead role for the future of the national public warning capability?" To that question, PPW answers a resounding "Yes!" PPW believes that EAS is an important part of the national warning picture, but that there are other aspects of public warning that are sufficiently removed from the broadcast-oriented tradition of EAS to make it unwise to lump the entire national warning architecture under the rubric of EAS. Examples of such distinct, but vital, capabilities include Internet-based information systems, telephone and wireless systems, alerting radios, private alarm systems and community-based systems such as sirens.

Paragraph 25

A. Should there be FCC rules that require states with EAS plans to file those plans with the Commission for approval?

PPW believes that EAS planning should not be isolated, but rather should form part of all-hazards, all-modes public warning and information plans at the local, state and federal level. One established mechanism for encouraging and standardizing such plans is via the guidance associated with federal funding to state and local programs. That would suggest that such planning might best be driven by an agency with an existing funding relationship with state and local emergency managers.

In any event, it is unclear what would be required in order to extend the FCC's jurisdiction to enable it to mandate planning activities by state and/or local authorities.

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However, PPW would support a regulatory mandate requiring licensees and other regulated entities to participate in state and local public-warning planning processes.

Paragraph 26

- A. The FCC seeks comment on whether uniform national guidelines are preferred over the disparate manner in which states and localities implement EAS. (For example, EAS alerts may be requested by FEMA, state and local emergency managers, public safety officials, others identified in state plans. EAS may also be activated at the state and local level by Broadcasters and/or cable operators at management discretion, in connection with day-to-day emergency situations posing a threat to life and property.

PPW believes that local conditions and resources vary sufficiently that it would be unwise to impose too many technically detailed requirements on local implementations. There is also the risk that such standardization might stifle beneficial innovation. However, PPW does believe that there is a need for a national "standard of warning practice" to articulate minimal expectations and to provide decision-makers with a basis for evaluating warning system investments and operational warning decisions.

Paragraph 29

- A. How can digital technology be used to enhance warnings, and to what extent broadcast stations currently make use of this technology?

Digital technology can be used in numerous ways to enhance public warning capabilities:

It can provide unified and convenient tools for the creation of effective and complete warning messages;

It can allow those messages to be supplemented with audio, images, video and animations, and to be expressed in multiple languages;

It can coordinate the delivery of such warning messages over multiple media;

It can permit highly precise targeting of warning messages;

It can protect and verify the security of public warning communication links;

And it can enable the consistent and comprehensive monitoring of all kinds and levels of warning activity nationwide.

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Much of the digital production technology needed is already in daily use in the broadcast and multimedia industries, and the costs of such capabilities have plummeted. Technologies and standards for secure and interoperable data communications have been developed and refined by industry. However, it is only recently that digital communications formats and tools for public warning have emerged.

A number of demonstration projects have shown the effectiveness of digital technologies such as the OASIS "Common Alerting Protocol" standard, in integration with EAS, alerting radios, and numerous other public warning technologies. Building on this success, the Department of Homeland Security has sponsored trials of digital broadcasts of emergency information, including CAP alerts, in the Washington D.C. market. (These trials follow on successful demonstrations in California, Virginia and at the National Association of Broadcasters 2004 meeting in Las Vegas, Nevada.)

Just as the Internet Protocols enable various kinds of computers to work together, "CAP" can provide the basis for a secure "warning internet" that can leverage all our warning assets to achieve more than any single system can alone.

- B. Whereas the FCC recently reached the tentative conclusion that EAS rules should apply to all audio streams broadcast by a radio stations, such as IBOC, should the FCC adopt rules extending EAS obligations to other digital broadcast media, such as DBS, DTV and satellite DARS services?

PPW believes that wherever the FCC has granted a particular entity use of limited communication resources (e.g., radio-frequency spectrum or orbital positions) it should require some fraction of that resource to be made available in useful form for public safety activities. Within the broadcast realm at present this might mean EAS, but PPW believes the requirement should be framed in such a way that in the future other public warning services and activities could access this public resource, whether or not they fall within a strict technical definition of "EAS."

- C. When TV stations turn off their analog signals as part of the DTV transition, should they leave a market devoid of an EAS participating broadcaster?

PPW believes the public in such an area should not be left devoid of an officially recognized public warning capability that is at least equivalent in availability and effectiveness to EAS. Whether such a service is

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implemented via a technology called "EAS" may be less important than is the actual service provided to the public.

Paragraph 31

Reflecting on how EAS, as currently constituted, reaches a very limited audience listening to broadcast radio or watching broadcast or cable TV at the time the emergency announcement is made -

- A. They seek comment on whether this level of penetration is sufficient to comprise an effective public warning system?

Based on the body of social science research and expert opinion regarding effectiveness of public warnings, PPW respectfully suggests that no single warning medium can ever be sufficient alone, no matter how great its penetration. By the same token, even a warning medium of limited reach can be highly beneficial, if it reinforces and corroborates warnings received through other channels. A single, uncoordinated warning can easily be discounted as a false alarm. Effectiveness of warnings results in large part from the coordination of multiple warning media, which raises public confidence in the reality and accuracy of the warning message.

Paragraph 32

- A. Because EAS relies almost exclusively on delivery through analog radio and TV broadcast stations and cable systems, is EAS, in the current communications universe, outdated?

PPW believes that EAS itself is not outdated. However, the idea of treating broadcast media apart from other mechanisms for public warning may well be.

- B. Should there be a concerted government/industry effort to combine EAS with alternative public alert and warning systems (APAWS) to form a comprehensive national public warning system capable of reaching virtually everyone all the time?

EAS should certainly be one element of an integrated national warning capability, at least for the foreseeable future. Other technologies should not be viewed as "alternatives," in that their benefit is not as replacements for EAS. Rather, these other technologies should be viewed as additional tools in an integrated public warning toolkit.

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- C. How could a combine warning system that makes used of some or all of the features (as described in the text) be implemented?

PPW cites as one example the approach outlined in the whitepaper entitled "An Advanced EAS Relay Network Using the Common Alerting Protocol" which illustrates an approach to integrating EAS with other existing and future systems in a forward-looking national warning architecture. It discusses how the inherent "backward compatibility" of the CAP data standard would allow it to enhance EAS and other systems without disrupting them.

- D. Should all APAWS be required to be compatible with the existing EAS protocol?

The technical framework for the current EAS protocol was adopted to permit an in-band solution over AM and voice two-way radio systems. This placed a severe constraint on the amount of information that could be delivered. While that sacrifice may have been appropriate in the mid-1990s, PPW believes that imposing this dated standard on emerging and future warning systems would be unnecessary and inappropriate. Not only would it impede progress in the development and deployment of new warning systems, it would reduce the capabilities of a number of existing warning technologies.

More capable and flexible protocols have been explored, formalized and implemented; for example, the OASIS "Common Alerting Protocol" standard which has been implemented by numerous vendors to integrated broadcast and non-broadcast warning systems into a coordinated whole. One key feature of CAP is that it is fully capable of carrying EAS codes within the CAP message body. Thus CAP provides compatibility with EAS and other SAME-based alerting systems, without institutionalizing the limitation of that earlier technology.

Paragraph 33

- A. As an alternative, would the appropriate approach be to integrate EAS into a PAW 'system of systems' by adopting and using a single, integrated interface that would like the emergency manager and all emergency notification and delivery systems, regardless of the technology on which a particular system is based?

PPW believes this is the right approach, both from a public warning effectiveness point of view, and in terms of allowing market forces to

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align with government in driving toward continual improvement to the nation's warning capabilities.

- B. The FCC seeks comments on whether a CAP (Common Alerting Protocol) could act as an effective interface through which an emergency manager could access multiple emergency notifications services, including EAS.

PPW has supported the development of CAP as one approach to the goal of coordinated dissemination of well-crafted public warnings. CAP was designed to be both a template for complete and effective warnings, and as a framework for integration of existing and future warning systems. PPW believes that authorized warning originators would have their task simplified by the use of a single warning origination tool, the output of which, in CAP format, would then be automatically translated into the "native" formats for EAS, Weather Radio and any other warning system.

#### Paragraph 34

MSRC's Future Technologies/Digital Solutions Task Force recommends that the government should coordinate development of a Media Common Alert Protocol (MCAP) which should -

1. Be designed to deliver emergency messages via digital networks.
2. Flow over all method of digital transport.
3. Be received by all digital receivers.
4. Be optimized for point-to-multi-point networks and devices only.
5. Key attributes should be - addressability, scalability, interoperability and prioritizing

MSRC recommends industry organizations and companies should develop standards and specifications for carriage of MCAP on various media.

- A. The FCC seeks comments on MSRC's recommendations.

PPW supports the MSRC's recommendation and believes that the OASIS "Common Alerting Protocol" standard, which was developed based on social science research and practitioner experience regarding the composition of an effective warning message, offers a firm foundation for this work.

PPW notes that CAP was designed for use over both broadcast and point-to-point links and has been deployed in both modes, and that there appear to be few practical differences between the two applications. However, if

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there is a need for a specialized broadcast "profile," PPW believes it would be beneficial for it to share many of the existing characteristics of CAP.

Paragraph 35

- A. Would the mandating the adoption of such technology to other consumer electronic devices enhance the effectiveness of EAS and other PAW systems?

PPW supports the broad implementation of such technology in consumer devices, with the caveat that broad market uptake can have the downside effect of creating inertia that impedes technical advances. This is another reason PPW recommends that the national public warning architecture be viewed as a "system of systems" rather than a monolithic technical framework that could become more inflexible the more widely it was deployed.

Paragraph 39

The FCC seeks comment on how individuals with disabilities can be notified of EAS activation or other emergency alerts by such means. Comments should address whether a particular technological and economic resources associated with bringing state of the art emergency notification to the disabled community are adequate and, if not, what additional provisions are necessary. They should also address what the associated burdens would be of adding such resources.

There is a wide and growing array of technologies for alerting and informing individuals with various disabilities. The range of special-audience requirements is so broad that it seems futile to try to address them all with any one technology. Thus PPW believes that the creation of a "warning internet" to deliver consistent messages into various specialized warning systems is the only viable approach to this challenge.

Paragraph 40

In order to ensure that foreign language audiences are alerted, the FCC's EAS rules provide that EAS announcements may be made in the same language as the primary language of the station. The FCC seeks comment on the efficacy of these rules.

- A. The FCC seeks comments on whether current methodologies for providing alert and warning to non-English speaking persons are adequate.

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PPW believes that there are a number of technologies for multi-lingual alerting and information available, but that most of them operate outside the current framework of EAS. While some of these systems might benefit from the enhanced bandwidth offered by digital broadcasting technologies, PPW feels it is unrealistic to expect that EAS alone could ever adequately serve the needs to all language groups. This is another area where EAS could benefit from an operational partnership with other technologies, implemented through a standards-based "warning internet" for coordination.

Paragraph 41.

The FCC seeks comment as to the security issues relevant to EAS. In this section the Commission explains some concerns that have been put forth.

The FCC seeks comment on how to improve the security of EAS distribution methods, information, and equipment or how to ensure the security of any public warning system.

Digitally encoded messages can be digitally signed and encrypted to a high level of confidence. Digital signatures can be used not only to authenticate a message, but also to ensure that it has not been modified in transit. Such signed and encrypted messages have the advantage that they can transit untrusted communications links (e.g., radio links, telephone lines, satellite circuits) without fear of compromise. Thus, adoption of a digital message format such as CAP that can transmit text, audio and imagery would also permit the use of these mature standards for data encryption and authentication.

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***Comments on Paragraphs 13 through 40***

Ray Chadwick, ClassCo Inc.

**Paragraph 31, Page 13**

In creating EAS, the Commission sought to design a public alert and warning system that would function seamlessly with many sources of emergency communications. The Commission wished to avoid limiting EAS to a particular transmission system, so it adopted a mandatory standard digital protocol with a flexible architecture that the Commission believed could be used by many kinds of transmission media, encompass new technologies, and be expanded and upgraded as new kinds and generations of transmission systems became available. Despite this intended technical flexibility, EAS, as currently constituted, reaches the very limited audience listening to broadcast radio or watching broadcast or cable television at the time the emergency announcement is made. The most ubiquitous outlet for EAS is radio. However, on average, Americans listen to the radio for only about an hour and a half a day, primarily between 6:00 a.m. and 6:00 p.m. Even fewer people are reached by television. Although more than 98 percent of households in the United States have at least one television, the average set is in use only 31 percent of the day. We seek comment on whether this level of penetration is sufficient to comprise an effective public warning system. If it is not, what level of penetration should we seek and what is the best mechanism for reaching that goal?

An effective emergency warning capability must first generate within the public an awareness that there is issue or problem to dealt with, then provide specific information to define the nature of the threat and the recommended responses to be followed, and finally to support validation and collaboration of the threat in order to elicit broad public allegiance to the required response.

An effective capability for generating the public awareness must be always on (24/7), operate during power outages, wake sleeping persons throughout their household, and, for maximum effectiveness, provide and initial definition of the cause for alarm. An example of such a capability is a smoke detector.

A notification capability that can be selectively targeted is essential to supporting local emergency management's need to provide to specific neighborhood or block alerts (for example, hostage situations or police actions or gas main leaks). Additionally, the capability must also be able to deal with city (or state) wide alerts (for example, for drinking water contamination or flooding).

Broadcast capabilities are quite effective in large notifications for providing specific information regarding the nature of a threat, but cannot

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be individually targeted as is necessary for more localized issues. Also, broadcast systems cannot reliably perform the function of generating an initial awareness of a threat, especially during the night or during power failures or any time when receivers are not on.

As a result of these types of competing requirements, as well as the need of dealing with transient populations such as commuters, vacationers and traveling business persons, it is clear that no one system will be likely to provide for all alerting and messaging needs.

Paragraph 32, Page 13

Because EAS relies almost exclusively on delivery through analog radio and television broadcast stations and cable systems, is EAS, in the current communications universe, outdated? Instead, should there be a concerted government/industry effort to combine EAS with alternative public alert and warning systems (APAWS) to form a comprehensive national public warning system capable of reaching virtually everyone all the time? The possibilities are numerous and varied. Several companies offer landline-based interactive notification systems that would convey national, regional, and local emergency messages via the public switched telephone network to wireline telephone subscribers located in the specific geographic areas affected by emergencies.

Other companies offer systems that use Internet and/or cellular capabilities, including the cell-broadcast feature of digital cellular networks, to deliver alerts to mobile handsets of wireless subscribers or to televisions, cable boxes, clock radios, cars, computers, stand alone units or other devices after incorporating patented receiver devices. Some companies offer satellite based warning and messaging systems which use very small aperture terminal networking to provide direct satellite communications. There are also emergency message and warning systems offered on a subscription basis that use computerized calling systems, fax, email, and digital messaging to reach many different types of devices. Some of these systems are used currently by certain states, along with EAS as part of their public alert and warning system. How could a combined warning system that makes use of some or all of the features described here be implemented? Should the Commission require any APAWS to participate in the existing EAS and, if so, which ones and how should they participate? For example, should all APAWS be required to be compatible with the existing EAS protocol? In considering these issues, should our analysis distinguish between wireless systems used primarily for one-versus two-way communication, or point-to-point or multi-point versus broadcast? Commenters should discuss any legal or practical barriers to its implementation and effectiveness, noting whether legislation would be required from Congress or by Executive Order.

A fundamental requirement of an effective emergency messaging capability is that it be designed in response to a risk assessment model that treats with the most likely emergency scenarios, the impact on effected populations, the population density and diversity. From that point, specific systems and components of the overall warning capability can be defined and the cost-benefit analyses completed.

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Warning capabilities for the home range include both broadcast and specific direct transmission, to both generally available receivers that are not specifically designed for an alerting capability as well as to design specific devices optimized for an alerting capability. Additional alerting capabilities are provided by sirens and loudspeaker systems for outdoor populations.

For example, broadcast media can be provided both to generalized home receiver devices (TV, radios, etc.) and specific home alerting devices (NWR receivers, NWR capable TVs, etc.). Direct transmission can be provided both to devices designed for general communications (cell and land-line telephones, pagers, PDAs, computers, etc.) as well as devices specifically designed to support an alerting capability (for telephone land-line receivers, satellite receivers and pager receivers).

Regardless of the transmission medium (wired or wireless) provision of a 24/7 alerting capability in a specific location, especially when combined with capability for individual targeting of a message, requires deployment of a mission-specific device in that location. To be most effective, the device must create an alert that is distinctive from the normal method of operation, loud enough to wake a sleeping person, the device must be provisioned with information about its location.

Paragraph 33, Page 14

As an alternative, would the appropriate approach be to integrate EAS into a PAW "system of systems" by adopting and using a single, integrated interface that would link the emergency manager and all emergency notification and delivery systems, regardless of the technology on which a particular system is based? In this regard, we note that the Organization for the Advancement of Structured Information Standards (OASIS), a not-for-profit, international consortium that addresses the development, convergence and adoption of e-business standards, has adopted the Common Alerting Protocol (CAP) as an OASIS standard. CAP is a standardized, non-proprietary, data interchange format that simultaneously disseminates consistent all-hazard emergency alerts or public warning messages over different kinds of communications networks and systems, including those designed for multilingual and special needs populations. The CAP format is compatible with emerging and existing formats, such as web service applications, NWS' SAME, and the EAS protocol and offers a number of enhanced capabilities. Proponents assert that CAP has the potential to increase warning effectiveness and reduce costs and operational complexity by eliminating the need for multiple custom software interfaces to the many APAWS involved in all hazard warning. Several government agencies and private companies have also implemented CAP, including DHS, NWS, and Comlabs, Inc. We seek comment on whether the CAP could act as an effective interface through which an emergency manager could access multiple emergency notification services, including EAS.

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As described earlier, a variety of alert and messaging delivery strategies will be necessary to enable a comprehensive public warning capability. The provision of a common format for conveying and accessing data for each of these systems is essential in order to eliminate redundant cost as well as reduce translation errors when time and resources are critical.

Paragraph 34, Page 14

MSRC's Future Technologies/Digital Solutions Task Force recommends that the government should coordinate development of a Media Common Alert Protocol (MCAP) which should: (1) be designed to deliver emergency messages via digital networks; (2) flow over all methods of digital transport; (3) be received by all digital receivers; and (4) be optimized for point-to-multi-point networks and devices only. MSRC also suggests that key attributes of the MCAP should be addressability, scalability, interoperability and prioritizing. MSRC recommends that industry organizations and companies should develop standards and specifications for carriage of MCAP on various media. We seek comment on MSRC's recommendation. We are mindful that the availability of particular delivery methods may differ in rural and insular areas from more urban areas. We seek comment on any particular needs or considerations we should afford rural areas.

The lower population density of rural areas make them more likely to support effective point-to-point links and mission specific receivers.

Paragraph 35, Page 15

Finally, to what extent does an effective public warning system depend on the consumer electronics equipment that receives the warning? MSRC has identified as two primary functionalities of a future warning system the ability of a device (such as a radio or television set) to automatically turn on and tune in to the channel carrying the warning, and the capability of such a device to receive a geographically addressed message (through FIPS or GPS). We note that the technology exists to have consumer electronic devices turn on automatically in the event of an emergency. We note that, as described in paragraph 14 above, NOAA Weather Radios currently supply both these functions. Would mandating the adoption of such technology to other consumer electronic devices enhance the effectiveness of EAS and other PAW systems?

An effective warning capability must support the needs of local emergency managers and the reduced area within which notification of a local emergency would be required. Alert and message distribution capabilities that are overly broad (state or county wide) do not support the needs of local emergency managers, who might wish to disseminate information to only a localized area. Consequently, they will hesitate to initiate a broadcast when it will likely impact a large geographic area including populations that will have no interest in or need to receive the warning.

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The inclusion of specific warning receivers into a broad variety of consumer devices and receivers must only be based upon a very specific cost-benefit analysis balancing the goal of public notification against the cost and lead time for replacing the current generations of consumer electronics, the cost of implementing capabilities into multiple receivers in the home as opposed to only one receiver, and the capability of the receivers to react to messages targeted to the individual location. In the long run, implementation of a mission specific device to provide emergency alerts and messages into the home will likely be more cost effective than adding capabilities into all of the new consumer electronics in the home.

Paragraph 36, Page 15

Notifying Persons with Hearing and Vision Disabilities. Any consideration of best methods to contact the public during an emergency must address the needs of persons with disabilities. It is the policy of the United States for federal agencies to consider persons with disabilities in their emergency preparedness planning. According to the Department of Commerce, one in five Americans is disabled and one in ten is severely disabled. Fifty million people have some type of long lasting condition or disability, three million of whom have sensory disabilities involving sight or hearing.

Any public warning capability must comply with applicable Federal standards including ADA and FCC Section 255, among others. These statutes require that telecommunications and warning services be accessible by people with different abilities with the same degree of facility as that of the general market, if readily achievable, meaning easily accomplishable without much difficulty or expense.

The majority of disabled individuals are affected by either with diminished visual or hearing capability or with reduced mobility. The proportion of the population affected is expected to increase with the average age of the population. Additionally, other segments of the population, including children, those with low literacy and those for whom English is a second language, experience similar difficulties in receiving, understanding, and responding to emergency alerts and messages.

Warning capabilities that meet the needs of such individuals need to provide a combination of audible and visual warning queues as well as the ability to activate secondary devices such as sirens, bed shakers or strobe lights, thereby providing an alerting capability sufficiently intrusive so as to gain the person's attention and focus their efforts on receiving further information regarding the specific issue for which the warning has been issued.

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Ability to focus on specific audible or visual methods is a particular advantage of mission specific warning devices. Such devices can be built to provide very distinctive alerting indications (for example, such as a smoke detector) alert as opposed to the more generic indications (such as the ringing of a telephone) that are not of themselves indicative of an alert as opposed to the receipt of any message.

Enabling such capabilities, which currently exist in commercially available products, requires access to the alert information, as well as the ability to transmit the alert notifications to the device in the home or office.

Paragraph 37, Page 15

The Commission's commitment to ensuring that persons with disabilities have equal access to public warnings is well documented. For example, in addition to EAS, the Commission requires all distributors of video programming (including local broadcasters, cable operators and satellite television service providers) that provide emergency information to do so in a format that is accessible to persons with hearing and vision disabilities. When emergency information is provided in the audio portion of the programming, critical details about the emergency and how to respond must be provided in a visual format, such as closed captioning, open captions, crawls, or scrolls. Further, emergency information provided by crawls, scrolls or other visual means should not block closed captioning, and means. Emergency information that is provided in the video portion of a regularly scheduled newscast or a newscast that interrupts regular programming must also be made accessible to persons who are blind or have low vision. If this information is not part of a regularly scheduled newscast or is part of programming that interrupts regular programming (e.g. the emergency information is provided through "crawling" or "scrolling"), then this information must be accompanied by an aural tone. The same information must also be provided in an audible manner that is accessible to persons who are blind or have low vision. Emergency information provided by means other than closed captioning or video description should not block any closed captioning or video description and closed captioning or video description should not block any emergency information provided by means other than closed captioning or video description.

Providing emergency information requires alerting individuals to the presence of a threat, thereby giving them the awareness that they should secure more information from various communications channels. The capabilities for closed captioning, crawls or scrolls are applicable to the conveyance of information after a person with a disability has been alerted to the need to obtain such information. They are not generally applicable to the initial alerting of that person, unless he or she happens to have their receiver on and is watching or listening at the exact time when the alert is first broadcast. Consequently, the most effective solution to alerting

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persons with special needs is with a mission specific device designed to receive the alerts and convert them in a manner that can readily be perceived and understood by such individuals.

Paragraph 38, Page 16

We note that section 79.2 of the Commission's rules specifies particular triggering events and methods for emergency transmittal separate from those required by EAS. We seek comment on whether there are disparities in or conflicts between our EAS rules and those contained in section 79.2 that should be reconciled or combined and the manner in which such disparities or conflicts could be resolved in subsequent rules.

Paragraph 39, Page 16

We also note that the digital and alternative technologies discussed in paragraphs 29 to 30 above may have particular benefits for persons with hearing and vision disabilities. We seek comment on how individuals with disabilities can be notified of EAS activation or other emergency alerts by such means. Such comments should address whether particular technological and economic resources associated with bringing state of the art emergency notification to the disabled community are adequate and, if not, what additional provisions are necessary. They should also address what the associated burdens would be of adding such resources.

Technologies exist that can provide specific alerting to individuals in both audible and visual forms, combined with text and spoken indications of the nature of the alert. Such devices also have the capability to activate secondary devices and accommodate announcements in a variety of languages that can be selected by the user. Application of such devices require the user to purchase and install the alerting device (a task similar in complexity to setting up a cordless phone), plus access to a fixed line telephone line and certain user selected tariff telephony features. Cost to the consumer of such devices is equivalent to or less than the cost of other current receivers such as NWR radio receivers.

Paragraph 40, Page 16

Emergency Warning for Non-English Speakers. We should also consider the needs of people with primary languages other than English when considering the best method of contacting the public during an emergency. In order to ensure that foreign language audiences are alerted, the Commission's EAS rules provide that EAS announcements may be made in the same language as the primary language of the station. We seek comment of the efficacy of these rules. For example, if a radio station transmitting in English is located in a predominantly Spanish-speaking community, should the station transmit EAS alerts in both English and Spanish? Additionally, products can be developed to convert the EAS digital signal to provide aural and visual messages in any language. We seek comment on whether current methodologies for providing alert and

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warning to non-English speaking persons are adequate. If not, what additional provisions are necessary, and what would be the costs associated with implementing such provisions?

The ability to provide for special languages is limited on the broadcast side by capacity constraints, the necessity of determining what languages are necessary within a specific area and the difficulty and effort required in providing competent translation and dissemination of all of the specific languages. Additionally, many ethnic groups do not wish to identify themselves and /or submit their identities in to government databases. The cost and effort of maintaining such a database as individuals move from location to location becomes prohibitive.

Another technology exists that provides specific language capability in the individual home, based upon transmission of a specific protocol, which is then decoded into the specific language of choice. Such a solution allows individuals to procure an announcement device programmed in the language of their choice, which can be retained and moved with them to other locations. The transmission is point to point using fixed line telephone circuitry, thus enabling individuals to receive the notification in their language of choice providing they can access telephone lines and service.

This technology provides specific alerting to individuals in both audible and visual forms, combined with text and spoken indications of the nature of the alert in the language of their choice. Such devices also have the capability to activate secondary alerting capabilities. Application of such devices require the user to purchase and install the alerting device (a task similar in complexity to setting up a cordless phone), plus access to a fixed line telephone line and certain user selected tariff telephony features. Cost to the consumer of such devices is equivalent to or less than the cost of other current receivers such as NWR radio receivers.